

## **CLAIMS:**

What is claimed is:

1. An electrical signal transmission system, comprising:  
a plurality of elongated conductors extending in a generally parallel array, the conductors having input ends at one end of the array and output ends at an opposite end of the array;  
5 each conductor including an elongated intermediate section and transition sections at opposite ends of the intermediate section joining the intermediate section to said input and output ends of the conductor;  
said array of conductors defining two outside pairs of conductors and at least one inside pair of conductors, the transition sections of the conductors in each outside pair of  
10 conductors crossing each other; and  
the elongated intermediate sections of the conductors in said inside pair thereof being spaced apart wider than the elongated intermediate sections of the conductors in each outside pair thereof.
2. The electrical signal transmission system of claim 1 wherein the elongated intermediate sections of the conductors in each outside pair thereof are spaced apart a distance generally equal the spacing between the respective input ends of the conductors in the respective outside pair thereof.
3. The electrical signal transmission system of claim 1 wherein the transition sections of the conductors in said at least one inside pair thereof cross each other.
4. The electrical signal transmission system of claim 1 wherein said generally parallel array of conductors define a center line generally equidistant from and parallel to opposite sides of the array, and the elongated intermediate sections of the conductors in one outside pair thereof are spaced from the center line a distance equal to that of the elongated  
5 intermediate sections of the conductors in the other outside pair thereof.

5. The electrical signal transmission system of claim 1 wherein said generally parallel array of conductors define a center line generally equidistant from and parallel to opposite sides of the array, and the elongated intermediate sections of the conductors in said at least one inside pair thereof are spaced equidistant from opposite sides of the center line.

6. The electrical signal transmission system of claim 5 wherein the elongated intermediate sections of the conductors in one outside pair thereof are spaced from the center line a distance equal to that of the elongated intermediate sections of the conductors in the other outside pair thereof.

7. The electrical signal transmission system of claim 1, including a second inside pair of conductors having elongated intermediate sections spaced apart wider than the elongated intermediate sections of the conductors in each outside pair thereof.

8. The electrical signal transmission system of claim 7 wherein the transition sections of the conductors in said second inside pair thereof are separated from each other and are void of any crossover.

9. The electrical signal transmission system of claim 1 wherein an elongated intermediate section of a conductor of at least one of said pairs of conductors substantially overlaps an elongated intermediate section of a conductor of at least another of the pairs of conductors.

10. The electrical signal transmission system of claim 9, including a layer of non-conductive material disposed between the overlapping elongated intermediate sections.

11. The electrical signal transmission system of claim 1, including a pair of overlapping plates spaced inwardly of the elongated intermediate sections of said at least one inside pair of conductors, one of the overlapping plates in said pair thereof being connected by a conductor tab to each of the elongated intermediate sections of the at least one inside pair  
5 of conductors.

12. The electrical signal transmission system of claim 11, including a layer of non-conductive material disposed between said overlapping plates.

13. The electrical signal transmission system of claim 11, including a plurality of said pairs of overlapping plates spaced inwardly of the elongated intermediate sections of said at least one inside pair of conductors, one of the overlapping plates in each pair thereof being connected by a conductor tab to each of the elongated intermediate sections of the at least one  
5 inside pair of conductors.

14. An electrical signal transmission system, comprising:  
a plurality of elongated conductors extending in a generally parallel array and defining a center line generally equidistant from and parallel to opposites sides of the array, the conductors having input ends at one end of the array and output ends at an opposite end of the  
5 array;

each conductor including an elongated intermediate section and transition sections at opposite ends of the intermediate section joining the intermediate section to said input and output ends of the conductor;

said array of conductors defining two outside pairs of conductors and at least one  
10 inside pair of conductors, the transition sections of the conductors in each outside pair of conductors crossing each other;

the elongated intermediate sections of the conductors in said inside pair thereof being spaced apart wider than the elongated intermediate sections of the conductors in each outside pair thereof;

15 the elongated intermediate sections of the conductors in each outside pair thereof being spaced apart a distance generally equal the spacing between the respective input ends of the conductors in the respective outside pair thereof;

the elongated intermediate sections of the conductors in one outside pair thereof being spaced from the center line a distance equal to that of the elongated intermediate sections of  
20 the conductors in the other outside pair thereof; and

the elongated intermediate sections of the conductors in said at least one inside pair thereof being spaced equidistant from opposite sides of the center line.

15. The electrical signal transmission system of claim 14 wherein the transition sections of the conductors in said at least one inside pair thereof cross each other.

16. The electrical signal transmission system of claim 14, including a second inside pair of conductors having elongated intermediate sections spaced apart wider than the elongated intermediate sections of the conductors in each outside pair thereof.

17. The electrical signal transmission system of claim 16 wherein the transition sections of the conductors in said second inside pair thereof are separated from each other and are void of any crossover.

18. The electrical signal transmission system of claim 14 wherein an elongated intermediate section of a conductor of at least one of said pairs of conductors substantially overlaps an elongated intermediate section of a conductor of at least another of the pairs of conductors.

19. The electrical signal transmission system of claim 18, including a layer of non-conductive material disposed between the overlapping elongated intermediate sections.

20. The electrical signal transmission system of claim 14, including a pair of overlapping plates spaced inwardly of the elongated intermediate sections of said at least one inside pair of conductors, one of the overlapping plates in said pair thereof being connected by a conductor tab to each of the elongated intermediate sections of the at least one inside pair  
5 of conductors.

21. The electrical signal transmission system of claim 20, including a layer of non-conductive material disposed between said overlapping plates.

22. The electrical signal transmission system of claim 20, including a plurality of said pairs of overlapping plates spaced inwardly of the elongated intermediate sections of said at least one inside pair of conductors, one of the overlapping plates in each pair thereof being connected by a conductor tab to each of the elongated intermediate sections of the at least one  
5 inside pair of conductors.